ABSTRACT

A method and apparatus for calibrating a semi-empirical process simulator used to determine process values in a plasma process for creating a desired surface profile on a process substrate includes providing a test model which captures all mechanisms responsible for profile evolution in terms of a set of unknown surface parameters. A set of test conditions is derived for which the profile evolution is governed by only a limited number of parameters. For each set of test conditions, test values are selected and a test substrate is actually subjected to a test process defined by the test values, thereby creating a test surface profile. The test values are used to generate an approximate profile prediction and are adjusted to minimize the discrepancy between the test surface profile and the approximate profile prediction, thereby providing a final model of the profile evolution in terms of the process values.

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